



復旦大學

Fudan University



復旦大學物理系物質科學報告 Physics Department Colloquium

What are molecular motors, and how do they function in the cell?

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Abstract: Much of biological motion can be attributed to proteins called Molecular Motors. These "Motors" are truly nanomachines: they are mechano-chemical enzymes that generate tiny pico-Newton forces, and take nano-meter size steps. As one of nature's first accessible nanomachines, they have been intensively studied by biophysicists. In addition to being intriguing, motors are biologically important, as they contribute critically to creating and maintaining cellular order and organization. Impaired transport leads to neuronal degenerative diseases such as Alzheimers disease, and developmental diseases like Lisencephaly. Initial studies focused on single-motor function, but in cells, motors typically function in groups. I will begin with an introduction to motors and their single-motor function, and some aspects of ensemble (group) function in vitro. I will then go on to discuss how biophysical approaches were developed to determine how many motors function together in cells, and will end with studies that discovered the biophysical nature of the disease Miller-Dieker Lissencephaly.

Time: 2:00pm, Tuesday, May 19, 2015

Location: Physics Building, Room 221B

(Cookies and coffee will be served from 1:30 pm)